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STETINA BRUNDA GARRED & BRUCKER 75 ENTERPRISE, SUITE 250 ALISO VIEJO, CA 92656			RAPP, CHAD	
			ART UNIT	PAPER NUMBER
			2125	6

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/694,900

Applicant(s)

JARED, STEPHEN J.

Examiner

Chad Rapp

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 12-17 and 23-28 is/are rejected.
- 7) ☒ Claim(s) 7-11 and 18-22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 and 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. Claims 1-28 are presented for examination.

Allowable Subject Matter

2. Claims 7-11 and 18-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grumbine in view of Farah et al.

Grumbine teaches the claimed invention(claim 1) substantially as claimed including a method of milling an orthotic device by using a computer controlled milling tool, the orthotic device by using a computer controlled milling tool, the orthotic device defined by a orthotic device upper contour, the method comprising:

- a. Providing a work piece defining a mill plane and a perpendicular axis thereto is taught as a monolithic work piece. The work piece is machined along parallel paths. The perpendicular axis is the rotational axis of the milling tool.(col. 2 lines 6-7, col. 2 lines 35-37 and fig. 3);

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b. Milling the milling tool into the work piece along the perpendicular axis to a depth corresponding to the orthotic device upper contour is taught as the machine tool is guided along parallel paths through the work piece while the machine tools height is automatically adjusted to conform with the desired top surface contour(col. 3 lines 32 to col. 4 line 1);

c. Translating the milling tool relative to the work piece in the mill plane along a milling path while adjusting the depth of the milling tool to correspond to the orthotic device upper contour to selectively remove material from the work piece for producing the orthotic device therefrom is taught as the machine tool is guided along parallel paths through the work piece while the machine tools height is automatically adjusted to conform with the desired top surface contour(col. 3 lines 32 to col. 4 line 1).

Grumbine teaches the above listed details of the independent claim 1, however, Grumbine does not teach: the milling path being characterized by a plurality of mill rotations about the perpendicular axis and successive ones of the mill rotations being radially further from the perpendicular axis.

Farah et al. teaches :

a. The milling path being characterized by a plurality of mill rotations about the perpendicular axis is taught as there are a number of paths of circular or rotational paths(figs. 9A-9G);

b. Successive ones of the mill rotations being radially further from the perpendicular axis is taught as the circular paths are increasing further from the center(figs. 9A-9G).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Farah et al. because

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the cutting method and system of Farah et al. teaches that contouring a cutting tool that is applicable to any geometry of a final product, regardless of the complexity of geometry in a work piece.

As to claim 2, Farah et al. teaches wherein step c) the milling tool is translated in the mill plane at a substantially constant speed is taught as constant tool load and constant removal rate along the cutting path(col.1 lines 46-51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Farah et al. because it avoids damage to the cutting tool and work piece.

As to claim 3, Farah et al. teaches wherein step c) the milling tool is sized and configured to perform a climb cut into the work piece is taught as the cutting tool remains along the tool path in a climb cutting condition(col. 4 lines 1-7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Farah et al. because it prevents any changes acting on the cutting tool which causes the cutting tool to break.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grumbine in view of Farah et al and further in view of Hemmett et al.

Grumbine and Farah et al. teach the claimed invention(claim 1) see paragraph number 4 above.

As to claim 4,

Grumbine teaches:

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a. Wherein the milling tool has a spherical-shaped end mill is taught as ball-shaped milling tool(col.2 lines 11).

Hemmett et al. teaches :

a. Wherein the step c) the milling tool is translated along the milling path which aligns the spherical-shaped end mill tangentially with the orthotic device upper contour is taught as the tangentially slope and the ball end mill tool(see fig. 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Hemmett et al. because it improves the efficiency of CNC machining by automatic computer selection of feedrate for sculptured machining.

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grumbine in view of Farah et al and further in view of Ley.

Grumbine and Farah et al. teach the claimed invention(claim 1) see paragraph number 4 above.

As to claim 5, Ley teaches that wherein the mill rotations each include at least one elliptical section thereof is taught as the tool is guided on an elliptical path (col. 2 lines 57-59).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Ley because it allows greater operating speeds and better adjustment possibilities and higher precision for precise fits.

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As to claim 6, Ley teaches that wherein the mill rotations are generally elliptical-shaped is taught as elliptical paths)col. 3 lines 24-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Ley because it allows greater operating speeds and better adjustment possibilities and higher precision for precise fits.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grumbine in view of Farah et al

Grumbine teaches the claimed invention(claim 12) substantially as claimed including a method of generating data for controlling a computer controlled milling tool to mill a work piece to form an orthotic device therefrom having an orthotic device upper contour the method comprising:

a. Accessing contour data representative of the orthotic device upper contour, the contour data being relatable to a mill plane and a perpendicular axis thereto is taught as a monolithic work piece. The work piece is machined along parallel paths. The perpendicular axis is the rotational axis of the milling tool.(col. 2 lines 6-7, col. 2 lines 35-37 and fig. 3).

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Grumbine teaches the above listed details of the independent claim 12, however, Grumbine does not teach: generating milling path data using the accessed contour data, the milling path data being representative of a milling path characterized by a plurality of mill rotations about the perpendicular axis and Successive ones of the mill rotations being radially further from the perpendicular.

Farah et al. teaches :

a. Generating milling path data using the accessed contour data, the milling path data being representative of a milling path characterized by a plurality of mill rotations about the perpendicular axis is taught as there are a number of paths of circular or rotational paths(figs. 9A-9G);

b. Successive ones of the mill rotations being radially further from the perpendicular is taught as the circular paths are increasing further from the center(figs. 9A-9G).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Farah et al. because the cutting method and system of Farah et al. teaches that contouring a cutting tool that is applicable to any geometry of a final product, regardless of the complexity of geometry in a work piece.

As to claim 13, Farah et al. teaches wherein step c) the milling tool is translated in the mill plane at a substantially constant speed is taught as constant tool load and constant removal rate along the cutting path(col.1 lines 46-51).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Farah et al. because it avoids damage to the cutting tool and work piece.

As to claim 14, Farah et al. teaches wherein step c) the milling tool is sized and configured to perform a climb cut into the work piece is taught as the cutting tool remains along the tool path in a climb cutting condition(col. 4 lines 1-7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Farah et al. because it prevents any changes acting on the cutting tool which causes the cutting tool to break.

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grumbine in view of Farah et al and further in view of Hemmett et al.

Grumbine and Farah et al. teach the claimed invention(claim 12) see paragraph number 8 above.

As to claim 15,

Grumbine teaches:

a. Wherein the milling tool has a spherical-shaped end mill is taught as ball-shaped milling tool(col.2 lines 11).

Hemmett et al. teaches :

a. Wherein the step c) the milling tool is translated along the milling path which aligns the spherical-shaped end mill tangentially with the orthotic device upper contour is taught as the tangentially slope and the ball end mill tool(see fig. 5).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Hemmett et al. because it improves the efficiency of CNC machining by automatic computer selection of feedrate for sculptured machining.

10. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grumbine in view of Farah et al and further in view of Ley.

Grumbine and Farah et al. teach the claimed invention(claim 12) see paragraph number 8 above.

As to claim 16, Ley teaches that wherein the mill rotations each include at least one elliptical section thereof is taught as the tool is guided on an elliptical path (col. 2 lines 57-59).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Ley because it allows greater operating speeds and better adjustment possibilities and higher precision for precise fits.

As to claim 17, Ley teaches that wherein the mill rotations are generally elliptical-shaped is taught as elliptical paths)col. 3 lines 24-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Ley because it allows greater operating speeds and better adjustment possibilities and higher precision for precise fits.

Claim Rejections - 35 USC § 103

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11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grumbine in view of Hemmett et al.

Grumbine teaches the claimed invention(claim 23) substantially as claimed including a method of milling an orthotic device by using a computer controlled milling tool, the milling tool has a spherical-shaped end mill, the orthotic device defined by a orthotic device upper contour, the method comprising:

a. Providing a work piece defining a mill plane and a perpendicular axis thereto is taught as a monolithic work piece. The work piece is machined along parallel paths. The perpendicular axis is the rotational axis of the milling tool.(col. 2 lines 6-7, col. 2 lines 35-37 and fig. 3);

b. Milling the milling tool into the work piece along the perpendicular axis to a depth corresponding to the orthotic device upper contour is taught as the machine tool is guided along parallel paths through the work piece while the machine tools height is automatically adjusted to conform with the desired top surface contour(col. 3 lines 32 to col. 4 line 1);

c. Translating the milling tool relative to the work piece in the mill plane along a milling path while adjusting the depth of the milling tool to correspond to the orthotic device upper contour to selectively remove material from the work piece for producing the orthotic device therefrom is taught as the machine tool is guided along parallel paths through the work

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piece while the machine tools height is automatically adjusted to conform with the desired top surface contour(col. 3 lines 32 to col. 4 line 1).

Grumbine teaches the above listed details of the independent claim 23, however, Grumbine does not teach: the milling path being configured to align the spherical-shaped end mill tangentially with the orthotic device upper contour.

Hemmett et al. teaches :

a. The milling path being configured to align the spherical-shaped end mill tangentially with the orthotic device upper is taught as the machine tool is guided along parallel paths through the work piece while the machine tools height is automatically adjusted to conform with the desired top surface contour(col. 3 lines 32 to col. 4 line 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Hemmett et al. because it improves the efficiency of CNC machining by automatic computer selection of feedrate for sculptured machining.

13. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grumbine in view of Hemmett et al. and further in view of Farah et al.

Grumbine and Hemmett et l. teach the claimed invention(claim 23) see paragraph number 12 above.

Farah et al. teaches :

a. The milling path being characterized by a plurality of mill rotations about the perpendicular axis is taught as there are a number of paths of circular or rotational paths(figs. 9A-9G);

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b. Successive ones of the mill rotations being radially further from the perpendicular axis is taught as the circular paths are increasing further from the center(figs. 9A-9G).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Farah et al. because the cutting method and system of Farah et al. teaches that contouring a cutting tool that is applicable to any geometry of a final product, regardless of the complexity of geometry in a work piece.

As to claim 25, Farah et al. teaches wherein step c) the milling tool is translated in the mill plane at a substantially constant speed is taught as constant tool load and constant removal rate along the cutting path(col.1 lines 46-51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Farah et al. because it avoids damage to the cutting tool and work piece.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grumbine in view of Hemmett et al.

Grumbine teaches the claimed invention(claim 26) substantially as claimed including a method of generating data for controlling a computer controlled milling tool a work piece to form an orthotic device therefrom having an orthotic device upper contour, the milling tool has a spherical-shaped end mill, the method comprising:

a. Accessing contour data representative of the orthotic device upper contour, the contour data being relatable to a mill plane and a perpendicular axis thereto is taught as a monolithic work piece. The work piece is machined along parallel paths. The perpendicular axis is the rotational axis of the milling tool.(col. 2 lines 6-7, col. 2 lines 35-37 and fig. 3);

b. Generating milling path data using the accessed contour data, the milling path data being representative of a milling path is taught as the machine tool is guided along parallel paths through the work piece while the machine tools height is automatically adjusted to conform with the desired top surface contour(col. 3 lines 32 to col. 4 line 1).

Grumbine teaches the above listed details of the independent claim 26, however, Grumbine does not teach: the milling path being configured to align the spherical-shaped end mill tangentially with the orthotic device upper contour.

Hemmett et al. teaches :

a. The milling path being configured to align the spherical-shaped end mill tangentially with the orthotic device upper contour is taught as the machine tool is guided along parallel paths through the work piece while the machine tools height is

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automatically adjusted to conform with the desired top surface contour(col. 3 lines 32 to col. 4 line 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Hemmett et al. because it improves the efficiency of CNC machining by automatic computer selection of federate for sculptured machining.

16. Claims 27-28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grumbine in view of Hemmett et al. and further in view of Farah et al.

Grumbine and Hemmett et l. teach the claimed invention(claim 26) see paragraph number 15 above.

Farah et al. teaches :

a. The milling path being characterized by a plurality of mill rotations about the perpendicular axis is taught as there are a number of paths of circular or rotational paths(figs. 9A-9G);

b. Successive ones of the mill rotations being radially further from the perpendicular axis is taught as the circular paths are increasing further from the center(figs. 9A-9G).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Farah et al. because the cutting method and system of Farah et al. teaches that contouring a cutting tool that is applicable to any geometry of a final product, regardless of the complexity of geometry in a work piece.

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As to claim 28, Farah et al. teaches wherein step c) the milling tool is translated in the mill plane at a substantially constant speed is taught as constant tool load and constant removal rate along the cutting path(col.1 lines 46-51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify the teachings of Grumbine with the teachings of Farah et al. because it avoids damage to the cutting tool and work piece.

Conclusion


17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chad Rapp whose telephone number is (703)306-4528. The examiner can normally be reached on Mon-Fri 11:00-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on (703)308-0538. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chad Rapp
Examiner
Art Unit 2125

cjr


ALBERT W. PALADINI
PRIMARY EXAMINER